

Acousti-Celotex
in the
Office and
Bank

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FOREWORD

THE efficacy of any acoustical treatment will always depend in large measure upon the degree of technical skill, experience, and scientific acoustical knowledge applied in analyzing the conditions to be corrected.

There is not, nor ever can be, a monopoly of such knowledge. The sum of available knowledge in architectural acoustics, as in our other sciences, is nothing more than the combined experience, in laboratory research or actual practice, of organizations or individuals.

During the period covering the development of its acoustical business, thousands of dollars have been invested by The Celotex Corporation in acoustical research and development.

Part of this money has been invested in fostering special investigations and general research in six independent acoustical laboratories, and part in the promotion of experiments to determine the physiological and psychological effects of noise on human beings. The information developed has been made freely available to all who are interested, including the active competitors of Acousti-Celotex.

This policy of making such knowledge the common property of all who can benefit by its use is a concrete expression of the Corporation's belief that the acoustical industry can progress only in proportion to the degree in which each member of the industry contributes to those basic assets which properly belong to the industry, as a whole, and to the public.

Good acoustical materials and skilled acoustical engineering service can never be sold at bargain counter prices. Those which might be considered costly from the viewpoint of superficial price comparison are likely to prove the least expensive, since both the material and its installation will represent the results of thousands of hours and dollars invested in research and development.

The acoustical engineering service offered by The Celotex Corporation commands the latest and most complete scientific acoustical knowledge and technical practice.

This service is available to all requiring acoustical installations and is rendered through local approved acoustical representatives in every part of the country.

*The Celotex Corporation
919 North Michigan Avenue
Chicago, Illinois*

Why the Acousti-Celotex Sales Policy Assures Satisfaction

● ● ● Acousti-Celotex is sold only by Approved Acousti-Celotex Contracting Engineers, carefully selected as distributors. With their organizations of competent acoustical engineers, salesmen, and application mechanics in each territory, the most efficient and economical use of the product is assured.



“NOISE COSTS TOO MUCH”

Says Aetna Life Insurance Co.

HERE is a brief review of the findings of the Aetna Life Insurance Company in their two years study of the problem of noise reduction in offices.

The company operates a Control Department in which various classes of office workers, such as typists, machine operators and checkers, are put on a salary and bonus plan. This department kept accurate efficiency records for a full year before applying the acoustical ceiling treatment recommended by Celotex engineers, and then continued comparable records for the year following. As the result of this two year “before and after” test, which was incidentally the first practical and independent test of this nature ever completed, the Aetna Life Insurance Company installed over 325,000 sq. ft. of Acousti-Celotex in their new home office building in Hartford, Connecticut, placing the material on all ceiling areas of the building except storage spaces.



During the 2 year test which preceded the adoption of Acousti-Celotex, actual facts were developed and recorded as follows:

1. <i>Increased Workers' Efficiency</i> judged by earnings	8.8%
2. <i>Reduction of Errors</i>	
Typists	29%
Machine operators	52%
3. <i>Reduction of Turnover</i>	47%
4. <i>Reduction of Absence</i>	37 1/2%

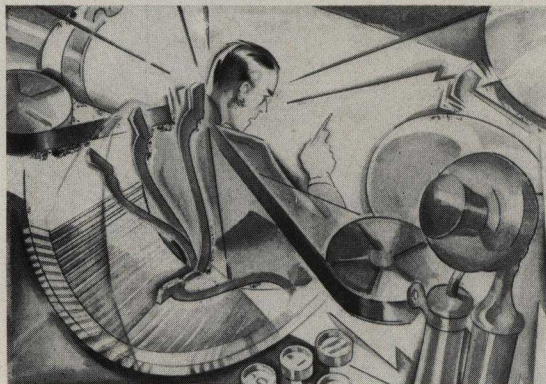
Following the adoption of the improvement there was a reduction of personnel in the department of about 10% and an obvious increase in the free time of employees.

All of these factors may be readily transposed into dollars and cents savings—decreased personnel, fewer errors, decreased personnel turnover, reduction in absentees, and increased efficiency—but consider just the savings effected by increased efficiency and apply it against your payroll; a 8.8% reduction, and you will then appreciate the results to be accomplished by the installation of a ceiling equipment of Acousti-Celotex in offices, banks and clerical rooms.

In concluding his report of their investigation and test, presented to the National Office Managers Association annual meeting, Mr. P. B. Griswold, Assistant Secretary of the Aetna Life Insurance Company, said:

“I want to again emphasize this treatment results in greatest benefit from the comfort of the employees. Employers must realize it is one of the most important considerations which will pay big profits through less turnover, increased efficiency, less errors, and better general attitude of the employee toward employer.”

A business man cannot afford to treat these facts indifferently. Whether an office is large or small, the employees few or many, the nature of the work ordinary or specialized, the fact remains that you now have sufficient independent information to prove that a noisy office is a financial burden to business. The same tried and proven principles of business management that prompt you to use electricity instead of oil lamps, bookkeeping machines instead of the antiquated longhand ledgers, business machines instead of pencils and pens, modern construction, ventilation and heating equipment instead of the worn out standards of a 1900 basis, you can “balance the office equipment and production account” with quieted ceiling equipment—an Acousti-Celotex ceiling.



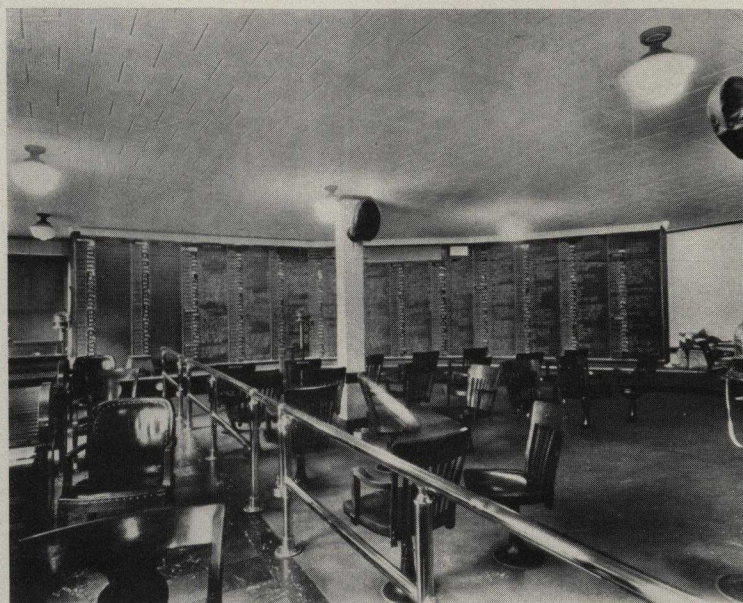


ACOUSTI-CELOTEX IN OFFICES AND BANKS

United States
Epperson
Company
Kansas City,
Missouri
Hoit, Price &
Barnes, Architects



American Trust Company
Berkeley, California
Albert G. Lansburgh,
Architect
W. H. Ratcliffe, Associate
Architect



Paine, Webber & Company
Boston, Massachusetts
Board Room
Shepard and Stearns, Architects



Parke-Davis & Company
Detroit, Michigan
Smith, Hinchman &
Grylls, Architects

THE WESTERN UNION TELEGRAPH COMPANY
INCORPORATED

New Orleans, La. June 29th, 1930.
IN REPLY TO A LETTER OF

REPLYING TO YOUR LETTER OF

The Celotex Company,
New Orleans, La.
Gentlemen:-

It gives me pleasure to state that the difference between before and after the use of your Acousti-Celotex on the ceiling of our Telephone Receiving Room is really remarkable.

As an example of the result in the way of elimination of sound and correction of acoustics by the use of your material, we are frank to state that the results with us are such that it would be impossible for us to speak too highly of the excellence of your product for these purposes. We are more than satisfied, and can assure you that any skeptic would be convinced by a visit to the third floor of our new building here in New Orleans.

Yours very truly,

E. H. H. H.
Building Supervisor.

THE PHILADELPHIA ELECTRIC COMPANY
1000 CHESTNUT STREET
PHILADELPHIA

January 16, 1930.

EDWARD PORTER
VICE PRESIDENT

Mr. W. E. Muller,
Berger Acoustical Company, Inc.,
Otis Building,
Philadelphia, Pa.

Dear Mr. Muller:

Sometime ago your Company installed Acousti-Celotex in the ceiling of the fifth floor of the Edison Building, and it gives me great pleasure to inform you that it has proved perfectly satisfactory.

There is quite a large battery of machines located on this floor, as well as a number of employees engaged in work of a purely clerical nature, and the constant din and noise of the machinery caused quite a lot of disturbance and loss of considerable time due to the physical strain under which the employees were obliged to labor.

Serious thought was given of ways and means to eliminate this nuisance, and after considering many plans, we despaired of ever finding a solution to our troubles. Then we decided to install Acousti-Celotex, although it was doubtful to us that anything could be found to help us, but with its installation our troubles ended; the noise was done away with, voices no longer had to be raised in order to be heard, jagged nerves were settled and it can now be said of this floor, "you can almost hear a pin drop". It has indeed proved to be a wonderful investment and the amount of work performed on the floor has materially increased.

Again I wish to express my entire satisfaction with the installation, and assure you that I am pleased to recommend it to anyone.

Very truly yours,

G. P. Landwehr
Cost Accountant.

GPL/MD

JOHN H. CHILES, VICE PRES.
WILLIAM H. HARRIS, VICE PRES.
T. H. DAVIS, VICE PRES.

WILLIAM H. POLY, PRESIDENT

UNITED STATES GOVERNMENT DEPOSITORY

THE AUSTIN NATIONAL BANK
CAPITAL \$ 300,000.00
SURPLUS AND PROFITS \$800,000.00
AUSTIN, TEXAS

March 24, 1930.

Mr. S. W. Nichols,
c/o S. W. Nichols Company,
Dallas, Texas.

Dear Mr. Nichols:

Sometime ago I promised you I would write an expression of my opinion of the Acousti-Celotex treatment of our new bank. If I should attempt to put in this letter a complete expression of our appreciation of its merits, it would doubtless make a letter too long for you to read. To make a long story short, I feel that it is the best money that we have spent on the new construction.

I like it so well, and its merits are so fine, I am going to fix one or two rooms in my home as soon as possible, and we have two rooms in my home down stairs, where we did not think it would be needed at the time of letting our contracts, that I now feel sure in order to make our job complete that those rooms must receive the treatment.

It is great stuff and a noisy building is only half finished when constructed without it.

Sincerely yours,

J. A. H. H.
Vice Pres. and Cashier.

ESTABLISHED 1880
Paine, Webber & Company
New York Chicago
Boston

TELEPHONE
HUBBARD 8600

82 DEVONSHIRE STREET
BOSTON, MASS.

STOCK DEPARTMENT

F. E. Berry, Jr. & Company, Inc.
Little Building
Boston
Massachusetts

July 27, 1930.

Gentlemen:

In moving our offices from the second floor to the top floor of the National Chatham Bank Building, we consolidated our clerical system into one large room, which had heretofore been divided into five small rooms.

In view of the fact that we operated under the Elliott-Fisher system, requiring four bookkeeping machines, four adding machines and four manifold billers - all of which are quite noisy - it was originally planned to build a small room inside the clerical room in which these machines would be placed.

Upon investigation, we found, however, that it was possible to get sound absorbing treatment, and we chose Acousti-Celotex, which we installed in the ceiling of our large clerical room. We were happily surprised to find that it was absolutely unnecessary to have this inside room built to keep out the noise from the rest of the room.

The sound absorbing treatment has been more successful than we hoped, and is doing as much if not more than the manufacturers claimed for it.

Very truly yours,

PAINE, WEBBER & COMPANY

Stephens

SP-4

A FEW OF THE ACOUSTI-CELOTEX INSTALLATIONS

in

OFFICES AND BANKS

JEMISON-SIEBELS, BUILDING—*Birmingham, Alabama*
 LINCOLN DRUG COMPANY—*Little Rock, Arkansas*
 HOLLYWOOD NEWS—*Hollywood, California*
 FOX WEST COAST THEATRES—*Los Angeles, Calif.*
 LONG BEACH SUN BUILDING—*Los Angeles, Calif.*
 M-G-M FILM EX. BLDG.—*Los Angeles, Calif.*
 PACIFIC MUTUAL LIFE INS. CO.—*Los Angeles, Calif.*
 SEARS, ROEBUCK & COMPANY⁽²⁾
 —*Los Angeles, Calif.*
 U. S. BLDG. & LOAN ASS'N.—*Los Angeles, Calif.*
 U. S. RUBBER COMPANY—*Los Angeles, Calif.*
 AMERICAN CAN COMPANY⁽²⁾
 —*San Francisco, Calif.*
 HAWAIIAN PINEAPPLE CO.—*San Francisco, Calif.*
 LIBBY, McNEIL & LIBBY—*San Francisco, Calif.*
 SWIFT & COMPANY⁽¹⁾
 GENERAL ELECTRIC COMPANY⁽²⁾
 —*Bridgeport, Conn.*
 THE NEW DEPARTURE MFG. CO.—*Bristol, Conn.*
 AETNA LIFE INSURANCE COMPANY⁽²⁾
 —*Hartford, Conn.*
 CONNECTICUT GEN. LIFE INS. CO.—*Hartford, Conn.*
 PHOENIX MUTUAL LIFE INS. CO.—*Hartford, Conn.*
 SIKORSKY AVIATION CORPORATION—*Stratford, Conn.*
 AMERICAN BRASS COMPANY—*Waterbury, Conn.*
 SANITARY GROCERY COMPANY—*Washington, D. C.*
 MILLERS MUTUAL FIRE INS. ASS'N. OF ILL.—*Alton, Ill.*
 JEWEL TEA COMPANY—*Barrington, Ill.*
 BOARD OF EDUCATION—*Chicago, Illinois*
 BOWMAN DAIRY COMPANY—*Chicago, Illinois*
 CAMPBELL SOUP COMPANY—*Chicago, Illinois*
 CHICAGO DAILY NEWS—*Chicago, Illinois*
 COLGATE-PALMOLIVE-PEET CO.⁽²⁾
 —*Chicago, Illinois*
 CONTINENTAL CAN COMPANY⁽²⁾
 —*Chicago, Illinois*
 CRANE COMPANY⁽²⁾—*Chicago, Illinois*
 R. R. DONNELLEY & SONS CO.—*Chicago, Illinois*
 THE KOTEX COMPANY—*Chicago, Illinois*
 LORD, THOMAS & LOGAN—*Chicago, Illinois*
 LYON & HEALY—*Chicago, Illinois*
 MARSHALL FIELD & COMPANY—*Chicago, Illinois*
 OTIS ELEVATOR COMPANY—*Chicago, Illinois*
 PEPSODENT COMPANY—*Chicago, Illinois*
 PINES WINTERFRONT—*Chicago, Illinois*
 POPULAR MECHANICS PUBLISHING CO.—*Chicago, Ill.*
 TELETYPE CORPORATION—*Chicago, Illinois*
 VICTOR ADDING MACHINE CO.—*Chicago, Illinois*
 WALGREEN & COMPANY—*Chicago, Illinois*
 WM. WRIGLEY, JR. COMPANY⁽²⁾—*Chicago, Illinois*
 WOODSTOCK TYPEWRITER CO.—*Chicago, Illinois*
 Y. M. C. A.⁽²⁾—*Chicago, Illinois*
 CATERPILLAR TRACTOR COMPANY⁽²⁾
 —*Peoria, Illinois*
 INDIANA LIMESTONE COMPANY—*Bedford, Indiana*
 QUAKER OATS COMPANY—*Cedar Rapids, Iowa*
 MERIDITH PUBLISHING COMPANY—*Des Moines, Iowa*
 PRAIRIE GAS & OIL COMPANY—*Independence, Kansas*
 CROWN CORK & SEAL CO.—*Baltimore, Maryland*

R. G. DUN & COMPANY—*Baltimore, Maryland*
 FIRESTONE TIRE & RUBBER COMPANY—*Louisville, Ky.*
 STANDARD OIL COMPANY⁽²⁾—*New Orleans, La.*
 PEORIA LIFE INSURANCE CO.—*Peoria, Illinois*
 ROYAL NEIGHBORS OF AMERICA—*Rock Island, Ill.*
 FEDERAL LAND BANK—*Baltimore, Md.*
 PROCTOR & GAMBLE MFG. CO.—*Baltimore, Md.*
 EDISON ELEC. ILLUMINATING CO.—*Boston, Mass.*
 JOHN HANCOCK MUTUAL LIFE INS. CO.
 —*Boston, Mass.*
 PRICE, WATERHOUSE & COMPANY—*Boston, Mass.*
 HOTEL STATLER—*Boston, Mass.*
 LEVER BROTHERS—*Cambridge, Mass.*
 OLD COLONY ENVELOPE COMPANY—*Westfield, Mass.*
 FORD ADMINISTRATION BUILDING—*Dearborn, Mich.*
 GENERAL MOTORS—*Detroit, Michigan*
 PARKE DAVIS & COMPANY—*Detroit, Mich.*
 STEWART WARNER SPEEDOMETER CORP.
 —*Detroit, Mich.*
 MICHIGAN MILLERS MUTUAL FIRE INS. BLDG.
 —*Lansing, Mich.*
 DOW CHEMICAL COMPANY—*Midland, Mich.*
 GEO. A. HORMEL COMPANY—*Austin, Minn.*
 MINNEAPOLIS HEAT REGULATOR CO.
 —*Minneapolis, Minn.*
 KANSAS CITY POWER & LIGHT CO.—*Kansas City, Mo.*
 SKELLY OIL COMPANY—*Kansas City, Mo.*
 CAMPBELL SOUP COMPANY—*Camden, N. J.*
 WESTINGHOUSE ELEC. & MFG. CO.—*Newark, N. J.*
 PILLSBURY FLOUR COMPANY—*Newark, N. J.*
 DUPONT RAYON COMPANY—*Buffalo, New York*
 AMERICAN WEEKLY MAGAZINE OFFICES—*N. Y. C.*
 BATTEN-BARTON-DURSTINE & OSBORN—*N. Y. C.*
 BOY SCOUTS OF AMERICA—*New York City*
 CARNATION MILK COMPANY—*New York City*
 RADIO CORP. OF AMERICA—*New York City*
 WALL STREET JOURNAL—*New York City*
 EASTMAN KODAK COMPANY—*Rochester, New York*
 REYNOLDS TOBACCO CO.—*Winston-Salem, N. C.*
 SHERWIN WILLIAMS COMPANY—*Cleveland, Ohio*
 DIXIE OIL COMPANY—*Tulsa, Oklahoma*
 PHILA. STORAGE BATTERY CO.—*Philadelphia, Pa.*
 PITTSBURGH PLATE GLASS CO.—*Pittsburgh, Pa.*
 COCA COLA BOTTLING WORKS—*Jackson, Tenn.*
 GRAYBAR ELECTRIC COMPANY—*Seattle, Wash.*
 HAZEL ATLAS GLASS COMPANY—*Wheeling, W. Va.*
 MILWAUKEE JOURNAL—*Milwaukee, Wisconsin*
 INTERNATIONAL HARVESTER CO.—*Montreal, Canada*
 NATIONAL BREWERIES, LTD.—*Montreal, Canada*
 SUN LIFE ASSURANCE COMPANY—*Montreal, Canada*
 METROPOLITAN LIFE INS. CO.—*Ottawa, Canada*
 CANADA LIFE ASSURANCE CO.—*Toronto, Canada*
 THE T. EATON COMPANY—*Toronto, Canada*
 WESTERN CANADA AIRWAYS, LTD.—*Winnipeg, Canada*
 CHICAGO BURLINGTON & QUINCY R. R.—*Chicago, Ill.*
 C. & N. W. R. R.—*Chicago, Ill.*
 PEOPLES GAS LIGHT & COKE CO.—*Chicago, Ill.*
 BIG FOUR R. R.—*Indianapolis, Indiana*
 BOSTON & MAINE R. R. STATION—*Lawrence, Mass.*

(1) One of thirty-eight installations in U. S. A.

(2) One of several installations in U. S. A.

NEW YORK CENTRAL PASSENGER STA.—*Buffalo, N. Y.*
 CONSOLIDATED GAS COMPANY—*New York City*
 PENNSYLVANIA RAILROAD—*Philadelphia, Pa.*
 PHILADELPHIA ELECTRIC CO.—*Philadelphia, Pa.*
 MONTREAL LIGHT, HEAT & POWER CO.
 —*Montreal, Canada*
 MONTREAL TRAMWAYS COMPANY—*Montreal, Canada*
 TORONTO TERMINALS RAILWAY—*Toronto, Canada*

BANKS

PHOENIX NATIONAL BANK—*Phoenix, Arizona*
 UNION TRUST COMPANY—*Little Rock, Arkansas.*
 TITLE INSURANCE & TRUST COMPANY
 —*Los Angeles, Calif.*
 ANGLO LONDON & PARIS NATIONAL BANK
 —*San Francisco, Calif.*
 BANK OF ITALY—*Santa Monica, California*
 DENVER NATIONAL BANK BUILDING
 —*Denver, Colorado*
 BRIDGEPORT CITY TRUST COMPANY
 —*Bridgeport, Connecticut*
 HARTFORD-CONNECTICUT TRUST COMPANY
 Hartford, Conn.
 NEW HAVEN SAVINGS BANK—*New Haven, Connecticut*
 SECURITY TRUST COMPANY—*Wilmington, Delaware*
 FIRST SECURITY BANK—*Boise, Idaho*
 CENTRAL TRUST COMPANY OF ILLINOIS—*Chicago, Ill.*
 CHICAGO TRUST COMPANY—*Chicago, Illinois*
 CONTINENTAL ILLINOIS BANK & TRUST CO.
 —*Chicago, Ill.*
 NORTHERN TRUST COMPANY—*Chicago, Illinois*
 COMMERCIAL, MERCHANTS NAT'L. BANK & TR. CO.
 —*Peoria, Ill.*
 FIRST NATIONAL BANK—*Wilmette, Illinois*
 FIRST & TRI STATE BANK—*Fort Wayne, Indiana*
 BANKERS TRUST COMPANY—*Des Moines, Iowa*
 FIRST NATIONAL BANK—*Coffeyville, Kansas*
 CITY NATIONAL BANK—*Paducah, Kentucky*
 FEDERAL LAND BANK—*New Orleans, Louisiana*
 FIRST NATIONAL BANK—*Shreveport, Louisiana*
 MARYLAND TRUST COMPANY—*Baltimore, Maryland*
 AMERICAN TRUST COMPANY—*Boston, Massachusetts*
 FIRST NATIONAL BANK—*Boston, Massachusetts*
 NATIONAL SHAWMUT BANK—*Boston, Massachusetts*
 HADLEY FALLS TRUST COMPANY—*Holyoke, Mass.*
 LAWRENCE SAVINGS BANK—*Lawrence, Massachusetts*
 CITY SAVINGS BANK—*Pittsfield, Massachusetts*
 FEDERAL LAND BANK—*Springfield, Massachusetts*
 CENTRAL NATIONAL BANK—*Battle Creek, Michigan*
 DETROIT TRUST COMPANY—*Detroit, Michigan*
 UNION TRUST COMPANY—*Detroit, Michigan*
 UNION INDUSTRIAL BANK—*Flint, Michigan*
 GRAND RAPIDS TRUST CO.—*Grand Rapids, Mich.*
 AUSTIN NATIONAL BANK—*Austin, Minnesota*
 CITY BANK—*Kansas City, Missouri*
 FIRST NATIONAL BANK—*St. Louis, Missouri*
 FEDERAL RESERVE BANK (K. C. BRANCH)
 —*Omaha, Nebraska*
 FIRST NATIONAL BANK—*Binghamton, New York*

(2) One of several installations in U. S. A.

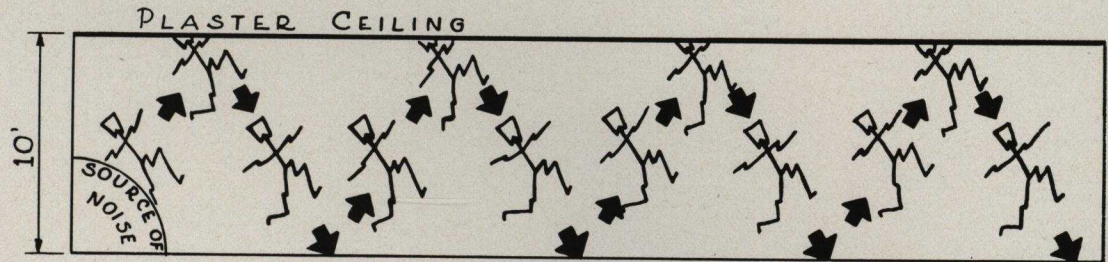
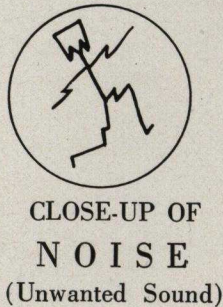
MANUFACTURERS & TRADERS TRUST COMPANY
 —*Buffalo, New York*
 SUFFOLK TITLE & GUARANTY COMPANY
 —*Jamaica, L. I., N. Y.*
 FEDERAL RESERVE BANK—*New York, N. Y.*
 NATIONAL CITY BANK BRANCH—*New York, N. Y.*
 SECURITY TRUST BANK—*Rochester, New York*
 FEDERAL RESERVE BANK—*Cincinnati, Ohio*
 CLEVELAND TRUST COMPANY—*Cleveland, Ohio*
 FEDERAL RESERVE BANK—*Cleveland, Ohio*
 AMERICAN NATIONAL BANK—*Oklahoma City, Okla.*
 EXCHANGE NATIONAL BANK—*Tulsa, Oklahoma*
 BANK OF CALIFORNIA—*Portland, Oregon*
 CITY NATIONAL BANK & TRUST CO.—*Philadelphia, Pa.*
 CORN EXCHANGE NATIONAL BANK—*Philadelphia, Pa.*
 UNION TRUST COMPANY—*Pittsburgh, Pa.*
 MECHANICS NATIONAL BANK—*Providence, R. I.*
 1ST NATIONAL BANK—*Memphis, Tennessee*
 AMERICAN EXCHANGE NATIONAL BANK
 —*Dallas, Texas*
 FEDERAL LAND BANK—*Houston, Texas*
 CHITTENDEN COUNTY TRUST COMPANY
 —*Burlington, Vt.*
 CITIZENS-WAYNESBORO BANK & TR. CO.
 —*Waynesboro, Va.*
 FEDERAL LAND BANK—*Spokane, Washington*
 BANK OF CALIFORNIA—*Tacoma, Washington*
 UNION BANK & TRUST COMPANY—*Huntington, W. Va.*
 NATIONAL EXCHANGE BANK—*Milwaukee, Wisc.*
 BANK OF MONTREAL—*Montreal, Canada*
 ROYAL BANK OF CANADA—*Montreal, Canada*
 BANK OF MONTREAL—*Toronto, Canada*
 ROYAL BANK OF CANADA—*Vancouver, Canada*

TELEPHONE AND TELEGRAPH COMPANIES

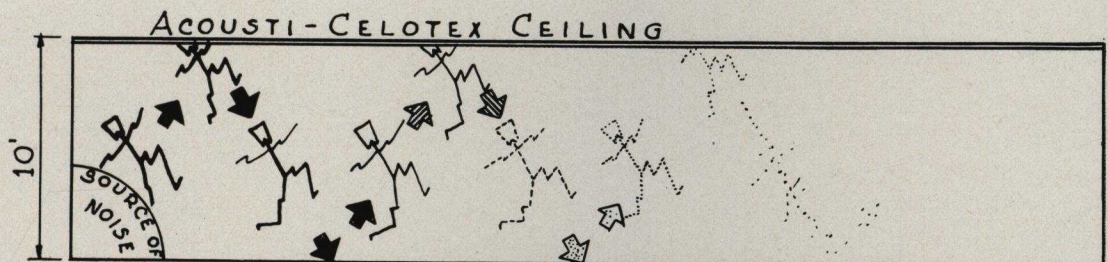
MOUNTAIN STATES TEL. & TEL. CO.—*Phoenix, Ariz.*
 SOUTHERN CALIFORNIA TEL. CO.—*Alhambra, Calif.*
 PACIFIC TEL. & TEL. CO.—*Berkeley, Calif.*
 ASSOCIATED TEL. CO. BLDG.—*Long Beach, Calif.*
 SOUTHERN NEW ENGLAND TEL. & TEL. CO.
 —*Hartford, Conn.*
 SOUTHERN BELL TEL. & TEL. CO. (2)
 —*Jacksonville, Fla.*
 WESTERN UNION TEL. CO. (2)—*Atlanta, Ga.*
 AMERICAN TEL. & TEL. CO. (2)—*Chicago, Ill.*
 UNITED TELEPHONE COMPANY—*Abilene, Kansas*
 N. E. TEL. & TEL. CO.—*Bangor, Maine*
 LINCOLN TELEPHONE COMPANY—*Auburn, Nebr.*
 NEW JERSEY BELL TEL. CO.—*Newark, N. J.*
 NEW YORK TELEPHONE COMPANY (2)
 —*Buffalo, N. Y.*
 POSTAL TELEGRAPH COMPANY (2)—*Buffalo, N. Y.*
 OHIO BELL TEL. COMPANY BLDG.—*Toledo, Ohio*
 SOUTHWESTERN BELL TEL. CO.—*Dallas, Texas*
 ILL. BELL TELEPHONE CO.—*Chicago, Ill.*
 N. W. BELL TELEPHONE CO. (2)
 —*Cedar Rapids, Iowa*

HOW ACOUSTI-CELOTEX ABSORBS NOISE

Sound travels 1120' in one second.

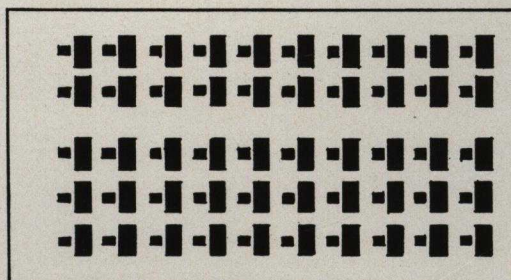


The diagram above illustrates how noise originating in a room with an ordinary plaster ceiling, is constantly reflected from one non-absorbent surface to another, thus filling the room with noise.

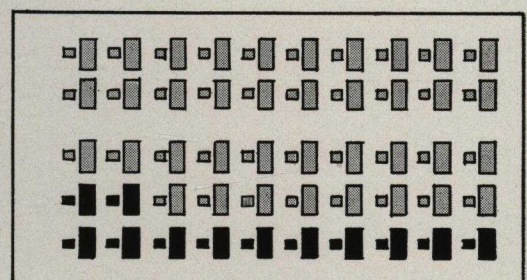


In this diagram, noise originating at the same source is reflected to the Acousti-Celotex ceiling, where it is quickly subdued by sound-absorbing properties of the material, and in this manner quickly quieting the room.

Below is a simple illustration of the quieting effect of Acousti-Celotex used in a room occupied by fifty people.



Before Acoustically Treated



After Acousti-Celotex Installation

The noise intensity reduction effected by the installation of Acousti-Celotex upon the ceiling of this office in effect eliminates the noise produced by the workers shown in gray.

NOISE QUIETING

Effects of Noise and Noise Reduction:

It is generally recognized by industrial physicians that workers employed in such noisy places as boiler shops or blast furnaces are especially susceptible to deafness. The effects of more moderate noises, however, are not found in the ear itself; they are widespread and insidious. They may be classified under three headings: first, effects on working output; second, effects on the individual's health and welfare; and third, distracting effects.

Effects on Working Output:

In practically every investigation, which has been made in the laboratory or in industry, it has been shown that noise adds to the pay roll by reducing the output of the vast majority of workers who are working under so-called "average noise." In accurately controlled experiments in the Colgate University psychological laboratory it was recently found that typing output in the test office increased slightly more than 4 per cent when the noise was reduced by means of an installation of Acousti-Celotex. In a room filled with office machines in a large insurance company and where the workers were on piece rate, a year's records indicate an increase in output of 12 per cent due to the practical reduction of noise. In one assembly department of an electrical factory an increase in output of more than 15 per cent followed shutting the windows, so the noise from an adjoining noisier plant was cut down and by stopping a noisy ventilating fan. Observations are indicating that noise, in excess of a certain level of loudness, cuts into efficiency and the pay roll, and that reduction of noise in the region above this critical loudness level is beneficial.

Effects on Health and Welfare:

Just why noise had ill effects on output and individual well-being was not definitely understood until a few years ago, when Dr. Donald A. Laird pointed out that it caused a fear reaction when present in definite amounts. It had been previously recognized by scientists that a very loud or very sudden noise caused a fear reaction. The essential elements of the fear reaction are: (a) Increased tension of voluntary muscles, (b) lessened activity of involuntary muscles in the digestive tract, (c) increased pulse rate, (d) increased blood pressure, (e) diminished secretion of saliva and digestive juices, and (f) a vague feeling of apprehension, sometimes accompanied by restless general behavior. In consequence of these effects, typists working in a noisy room consume about 20 per cent more calories of bodily energy in typing than the same typists do when working in the same room with the noise properly reduced by absorption. Typists working in a room of average office noise slowed up after two hours of continuous work, while the same typists in the quieted workroom gained somewhat in speed, due to the well-known warming-up phenomenon.

Effects by Distraction:

Irregular or sudden noises draw workers' attention away from their work, interfering with the progress of the work and preventing a thorough warming up. The tasks have to be started "cold" after each distraction. Some idea of the seriousness of this is obtained from experiments in which the speed of mental multiplication was increased in excess of 30 per cent by quieting ordinary office noises with Acousti-Celotex.

PAINTABLE PERMANENT ACOUSTI-CELOTEX

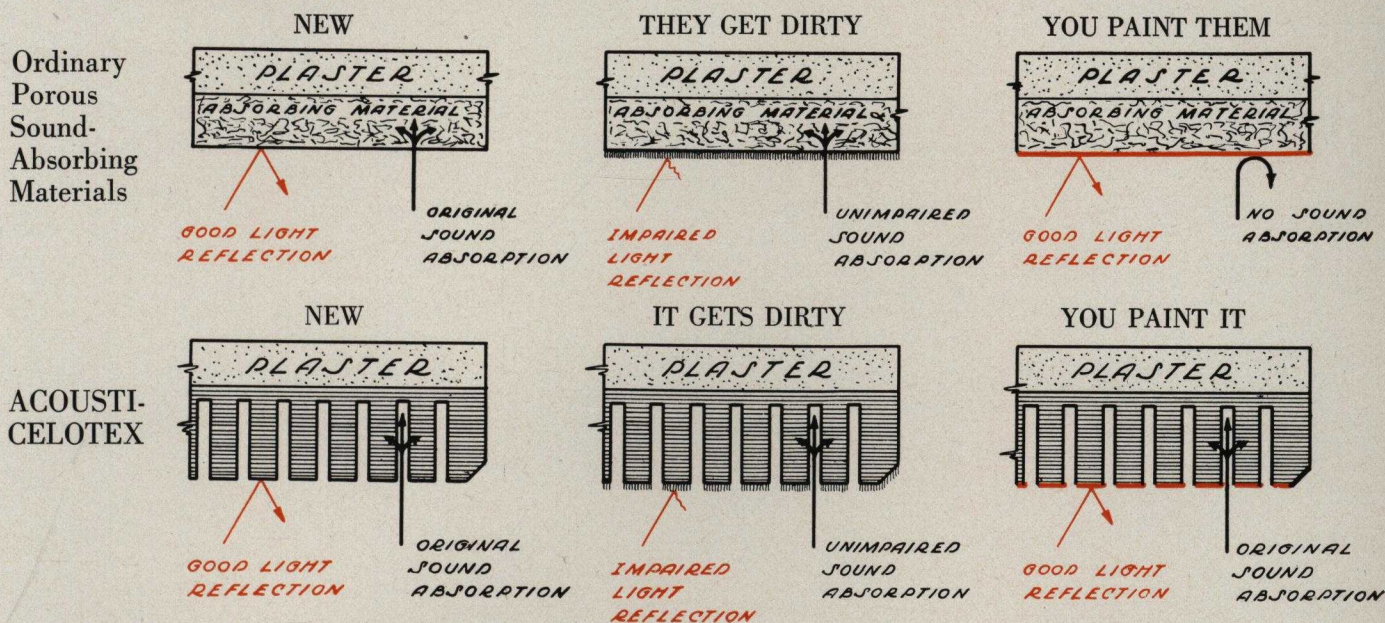
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Acousti-Celotex is a rigid block mechanically perforated to increase and insure unvarying sound absorbing efficiency. The tile are finished complete. Efficiency of the installation is not dependent upon the precision of the installing mechanics.

SIX REASONS FOR SELECTING THIS PREFERRED SOUND ABSORBING MATERIAL

- 1 EASY TO MAINTAIN**—Because Acousti-Celotex is perforated it may be repeatedly painted without impairing its acoustical efficiency. Special paints and special cleaning equipment are not required.

The Paintability of ACOUSTI-CELOTEX gives you Permanent Sound Absorption



- 2 PERMANENT**—Acousti-Celotex is a durable, wear-proof building material. It is Termite Proofed. It does not pack, settle or flake off. It successfully withstands ball impacts in gymnasiums.
- 3 FACTORY-FINISHED**—Acousti-Celotex, prepainted at our factory is now available. There is usually a saving in cost as compared with painting the material after it has been installed on the job. Painting in an occupied room also involves the protection of other surfaces, furniture and fixtures, and creates a general inconvenience, all of which, of course, is avoided by applying Acousti-Celotex as a decorated, finished unit. For the room with indirect lighting, adequate light reflection value may be obtained.
- 4 TIME-TRIED**—Acousti-Celotex has been used for over ten years. Millions of square feet, in thousands of jobs have been installed all over the world. This material is used extensively by the United States Government and by the largest firms in the United States.
- 5 VARIETY OF DESIGNS**—Acousti-Celotex, available in several thicknesses, covers the entire range of sound absorption needed for every type of acoustical job. The standard tile sizes, 6" x 12", 12" x 12", and 12" x 24" permit a great variety of pattern arrangements.
- 6 EASY TO APPLY**—Acousti-Celotex may be applied to any type of wall or ceiling surface in new or old buildings. Installation is usually not a noisy process—a factor of especial importance in hospital work.

THERMAL INSULATION

The thermal conductivity of Acousti-Celotex is approximately the same as Celotex insulation, 0.33 Btu. This becomes an added advantage of an Acousti-Celotex ceiling, directly under a roof.

This picture illustrates one of the attractive designs which may be achieved by the use of tile patterns in Acousti-Celotex.



Bank of America, Santa Monica, California, Krempel & Erkes, Architects. An example of the decorative possibilities of Acousti-Celotex, using a diamond pattern and painting double rows of tile a slightly darker color than the remainder of the ceiling.

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This picture illustrates one of the attractive designs which may be achieved by the use of tile patterns in Acousti-Celotex.



Federal Land Bank, Baltimore, Maryland. Acousti-Celotex was applied over the entire area of the ceiling panels between the large beams, various tile sizes being used on the shallow beams and the recesses. The treatment was finished in two coats of lead and oil paint. Wyatt & Holling are the architects. The Federal Land Banks at New Orleans, Houston, and Springfield, Mass., have also been quieted with Acousti-Celotex.

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TYPICAL ACOUSTI-CELOTEX INSTALLATIONS

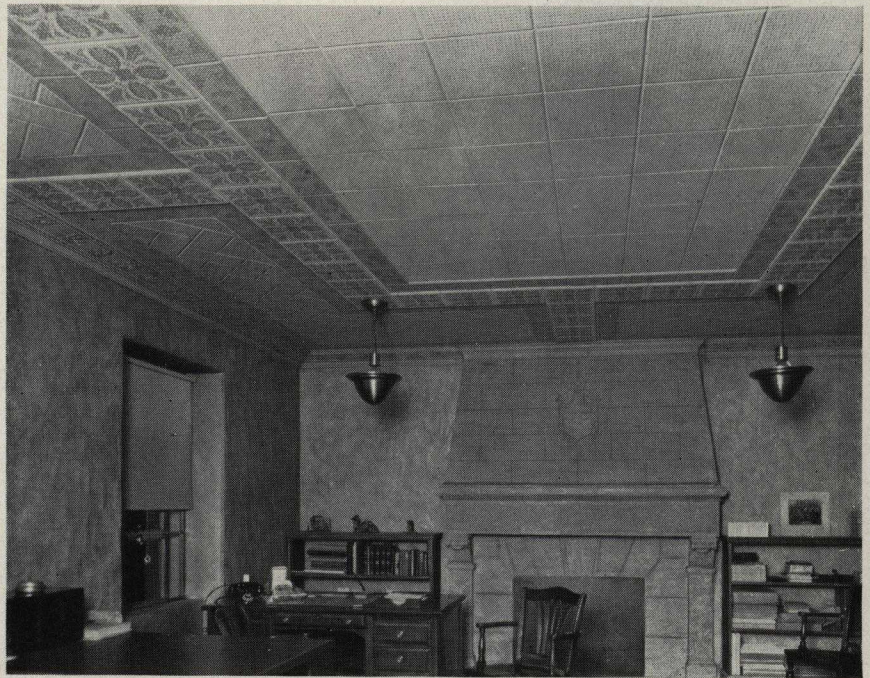
These two pictures illustrate the use of Acousti-Celotex in large, general office work spaces and in private offices.



Acousti-Celotex ceiling in office of Parke-Davis Company, Detroit, Michigan. Such a ceiling can be painted repeatedly and furnishes the practicability of a plaster ceiling for light reflection and ease of maintenance, as well as the advantage of noise quieting.

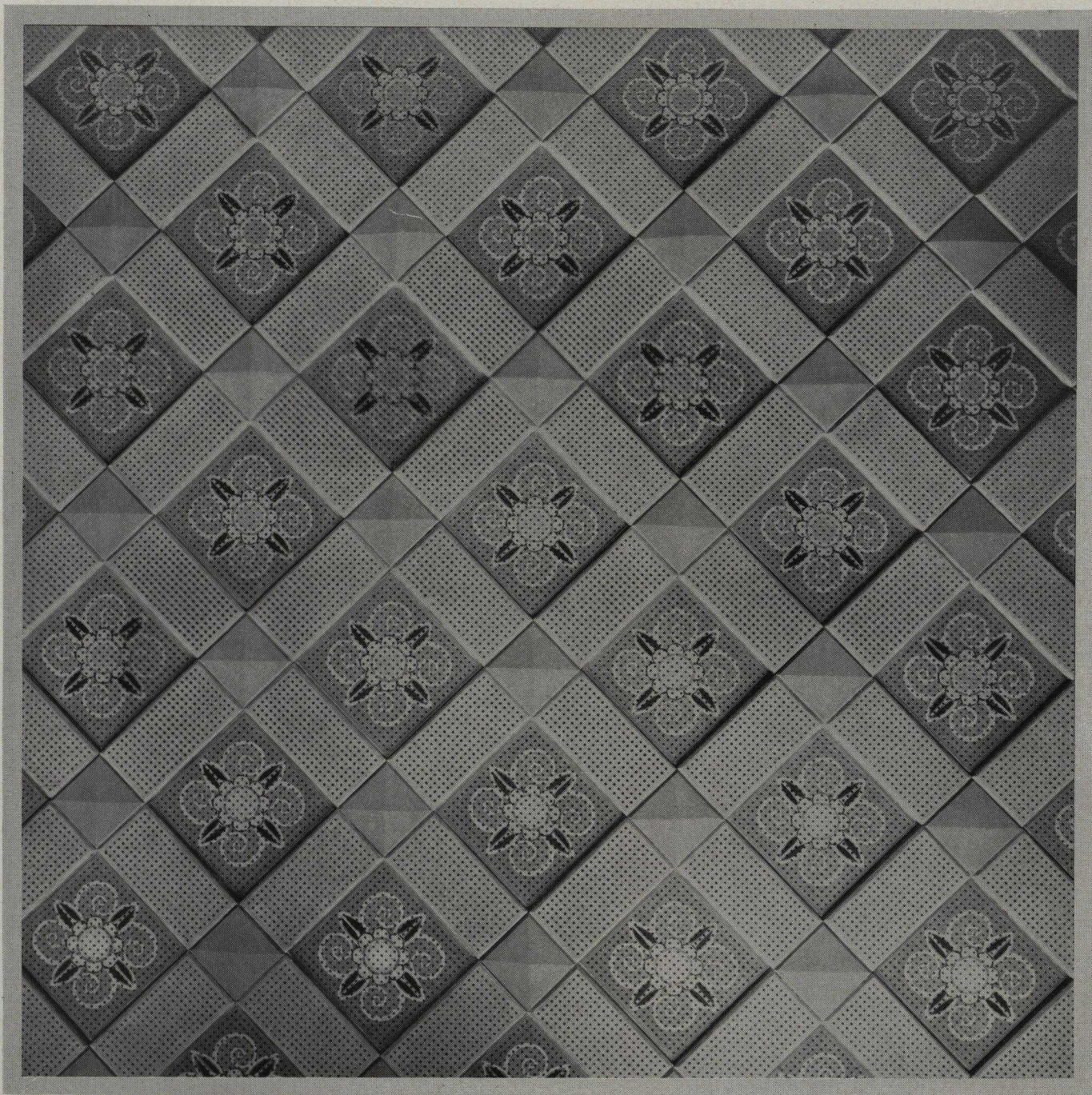


Acousti-Celotex ceiling in office of Hampshire & Decker, Inc., Baltimore, Maryland. An example of a decorative ceiling achieved by the use of various tile sizes in pattern effects, together with a simple stencil design.



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This picture illustrates one of the attractive designs which may be achieved by the use of tile patterns in Acousti-Celotex.



Ceiling in the office of Morrison & Co., Ltd., Los Angeles, California. The pattern was made by a combination of 6 x 12 in. type BB ($1\frac{1}{4}$ in. thick) and 12 x 12 in. type B ($\frac{3}{8}$ in. thick) Acousti-Celotex tiles and 6 x 6 in. wood blocks cut to a flat pyramidal shape. The type B Acousti-Celotex was decorated with a stenciled design applied over a dark field while the type BB was painted in a solid light color. The photograph shows clearly that painting has no effect on the efficiency of Acousti-Celotex, since it does not cover the perforations, which give the high absorption qualities.

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TECHNICAL DATA ON ACOUSTI-CELOTEX CANE TILE

Acousti-Celotex Cane Tile is made, by a patented process, from felted cane fibres into a light rigid tile, perforated with 441 holes per square foot to give it sound-absorbing efficiency and permanent paintability. It is manufactured in sizes of 6"x12", 12"x12", and 12"x24".

Sound Absorption Coefficients

	FREQUENCY					Noise Reduction Coefficient
	128	256	512	1024	2048	
Type C1, cemented to plaster*	.24	.27	.48	.57	.59	.50
Type C1, on 1" x 2" furring*	.36	.58	.51	.52	.62	.55
Type C2, cemented to plaster*	.19	.20	.69	.85	.65	.60
Type C2, on 1" x 2" furring*	.40	.59	.68	.81	.66	.70
Type C3, cemented to plaster*	.25	.27	.76	.88	.60	.65
Type C4, cemented to plaster*	.37	.43	.98	.79	.57	.70
Type C5, cemented to plaster	.14	.35	.63	.83	.90	.70
Type C6, cemented to plaster	.19	.41	.91	.92	.92	.80

*Painted with oil base paint.

The above figures have been taken from Official Bulletin No. V of the Acoustical Materials Association, dated January, 1937. The figure shown for "Noise Reduction Coefficient" is the average of the 256, 512, 1024 and 2048 cycle values, taken to the closest even 5%. This value has been adopted as the basis of comparison of efficiency in noise quieting work, as in offices, hospitals, banks, corridors, etc. For auditorium treatment, attention should be directed to the coefficients at 512 cycles and other pitches.

Weight, Thickness, and Size of Perforations

Type	Diameter of Perforations	Thickness	Weight per sq. ft.
C1	$\frac{3}{16}$ "	$\frac{1}{2}$ "	.84 lbs.
C2	$\frac{3}{16}$ "	$\frac{5}{8}$ "	.97 lbs.
C3	$\frac{3}{16}$ "	$\frac{13}{16}$ "	1.03 lbs.
C4	$\frac{3}{16}$ "	$1\frac{1}{4}$ "	1.50 lbs.
C5	$\frac{1}{4}$ "	$\frac{13}{16}$ "	.95 lbs.
C6	$\frac{1}{4}$ "	$1\frac{1}{4}$ "	1.37 lbs.

Effect of Paint:

The large perforations in Acousti-Celotex give it the unique property of "paintability." The many deep channels, to which the high efficiency of Acousti-Celotex is due, afford the impinging sound waves ready access to the inner absorbent spaces between fibres, and painting the surface of the Acousti-Celotex in no way interrupts this action to impair the efficiency of the material. It may be repeatedly brush or spray painted with any kind of paint, without reducing its acoustical efficiency, provided the perforations are not covered over.

Light Reflection:

In offices or other rooms, where a surface is desired having a higher light reflection factor

than the natural surface of Acousti-Celotex provides, white or light cream interior paints may be used to advantage. Curtis Lighting, Incorporated, of Chicago, give the light reflection factor of such a surface as 78 per cent, indicating that a painted Acousti-Celotex ceiling meets even the requirements of a completely indirect lighting system.

Heat Insulation:

Heat conductivity tests by the Flat Plate method in the laboratory of Armour Institute of Technology show Acousti-Celotex has a conductivity factor of 0.33 Btu per hour, per degree Fahrenheit, per 1 inch thickness, equal to standard Celotex.

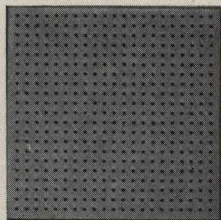
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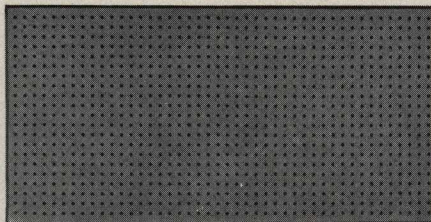
TYPES OF CANE TILE



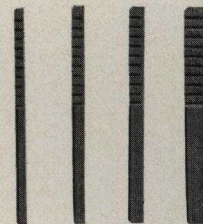
6"x12"



12"x12"

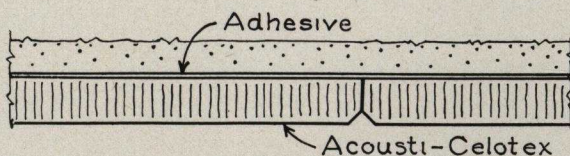


12"x24"



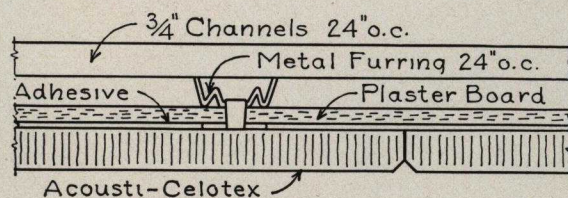
C-1 1/2"
C-2 5/8"
C-3 1 1/8"
C-4 1 1/4"

INSTALLATION DETAILS



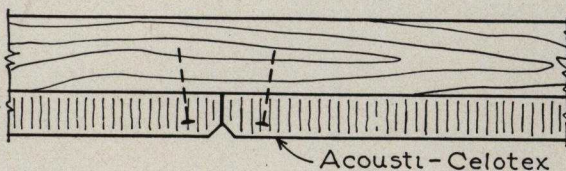
PLASTER OR CONCRETE CEILING

On plaster ceilings Acousti-Celotex is usually cemented (using an approved adhesive) and nailed directly to the plaster. If desired, Acousti-Celotex may be applied with a heavy bodied adhesive alone to the plaster or flat concrete surfaces.



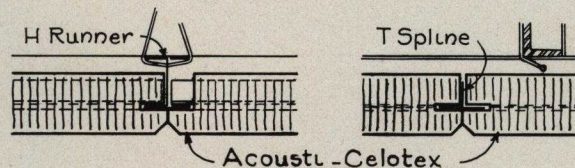
PLASTER BOARD CEILING

Where a suspended ceiling of lighter and cheaper construction than metal lath and plaster is desired, Acousti-Celotex may be fastened directly to gypsum board held by the Simplex Steel Products or similar systems.



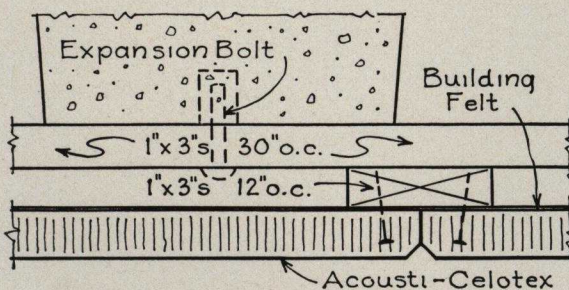
WOOD DECK

On ceilings of wood, as in churches or gymnasiums having an exposed wood roof deck, the Acousti-Celotex is nailed directly to the deck.



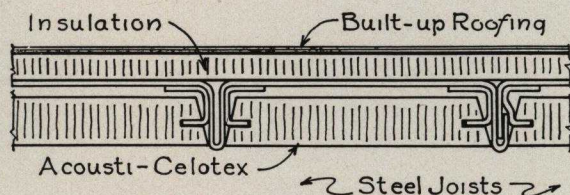
METAL SUSPENSION

Where it is desired to use Acousti-Celotex as the suspended ceiling by itself, the tiles are supported by metal members fastened to suspended metal furring, as shown above. Details of this type of construction are available on request.



WOOD FURRING

On concrete surfaces or other surfaces where it is desired to fur down, 1"x3" wood furring strips may be attached to the concrete with expansion plugs and the Acousti-Celotex nailed to the furring strips. Ordinarily a first course of strips, 30" on center, is used, to which is nailed the second course, 12" on center, to receive the 12"x12" tiles. A backing of building felt is used directly behind the Acousti-Celotex to prevent "breathing" between joints.



STEEL DECK

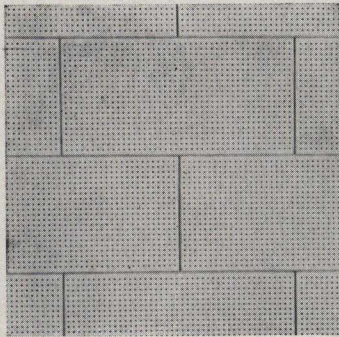
Acousti-Celotex may be used in combination with steel roof decks, such as Mahon, Holorib, Truscon, etc., to give a combined acoustical ceiling and steel roof deck having high heat insulating qualities. Acousti-Celotex has the same heat insulating value as an equal thickness of Celotex. Acousti-Celotex is cut to fit the steel deck and fabricated before erection.

Application to Curved Surfaces

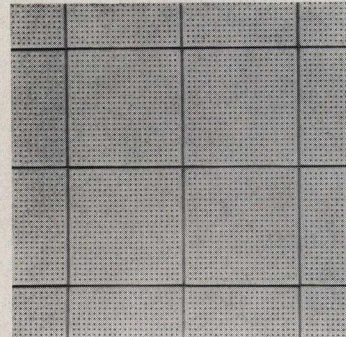
Sizes of Acousti-Celotex Tile are such as to facilitate installation on curved surfaces, such as arches and groined ceilings. The tile may be kerfed on the back to take sharp curves down to a radius of approximately 6 feet.

Acousti-Celotex Patterns

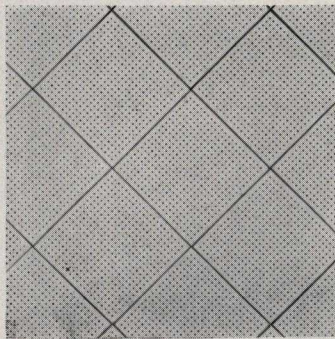
Here are seven typical patterns in which Acousti-Celotex may be applied.



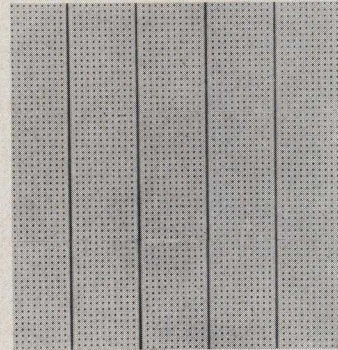
ASHLAR



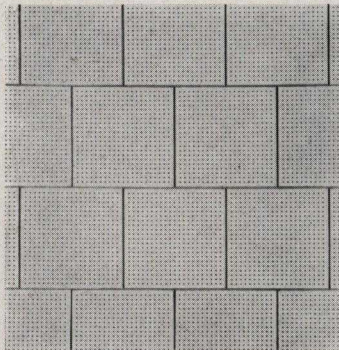
SQUARE



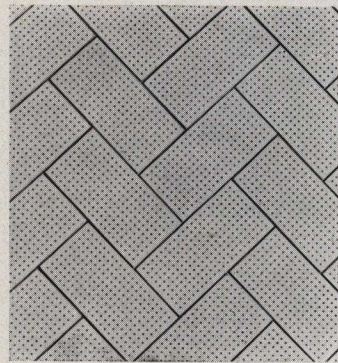
DIAMOND



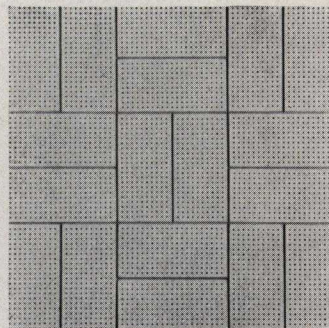
PLANK



BROKEN JOINT



HERRINGBONE



BASKET WEAVE

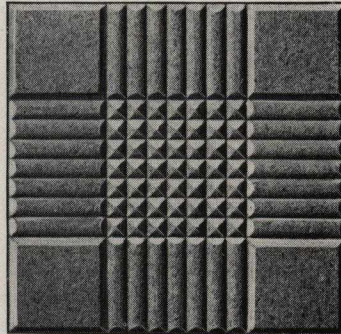
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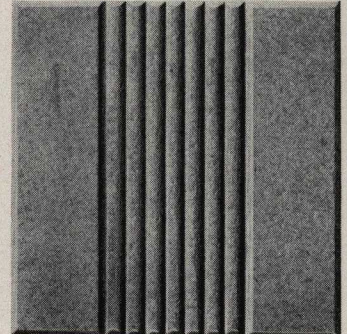
May be combined with any of these Celotex
 Ornaments for unusual decorative effects



C-9



C-6



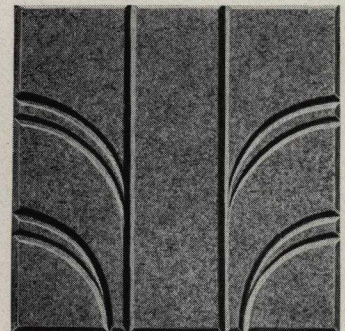
C-2



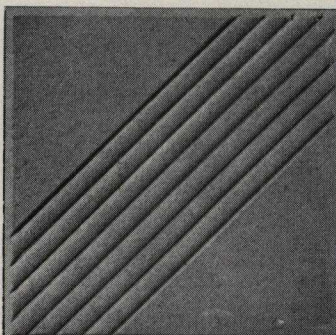
C-32



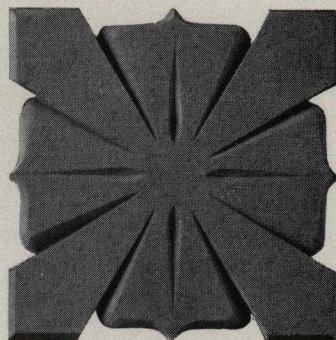
M-1



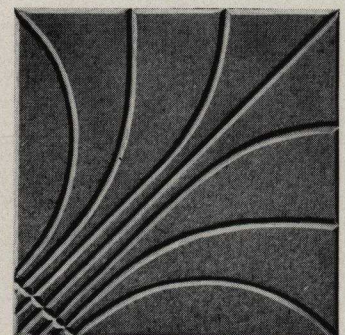
C-33



C-8



C-10



C-31

